# Flow Diagram for Neural Network-Based Virtual Age Estimation
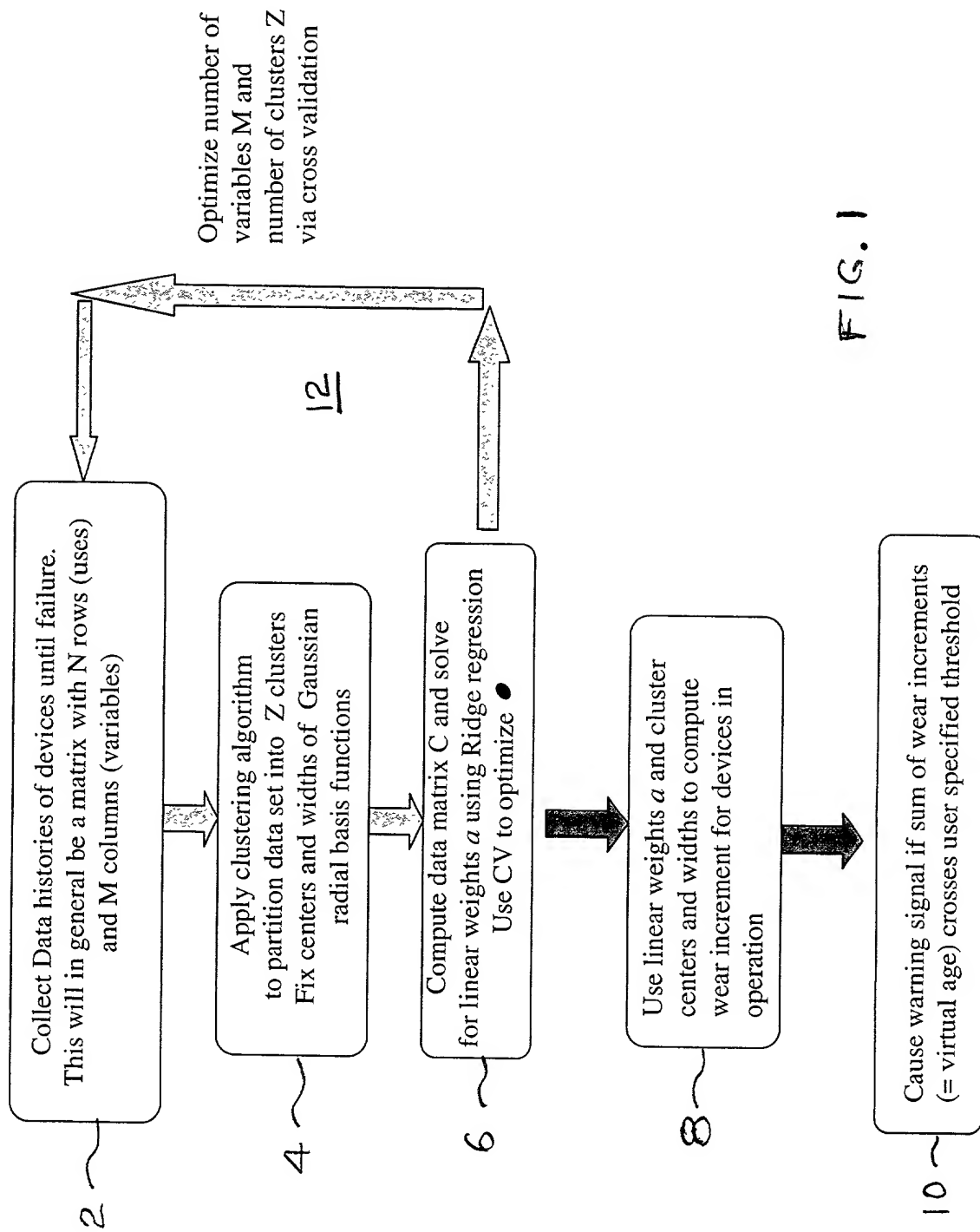
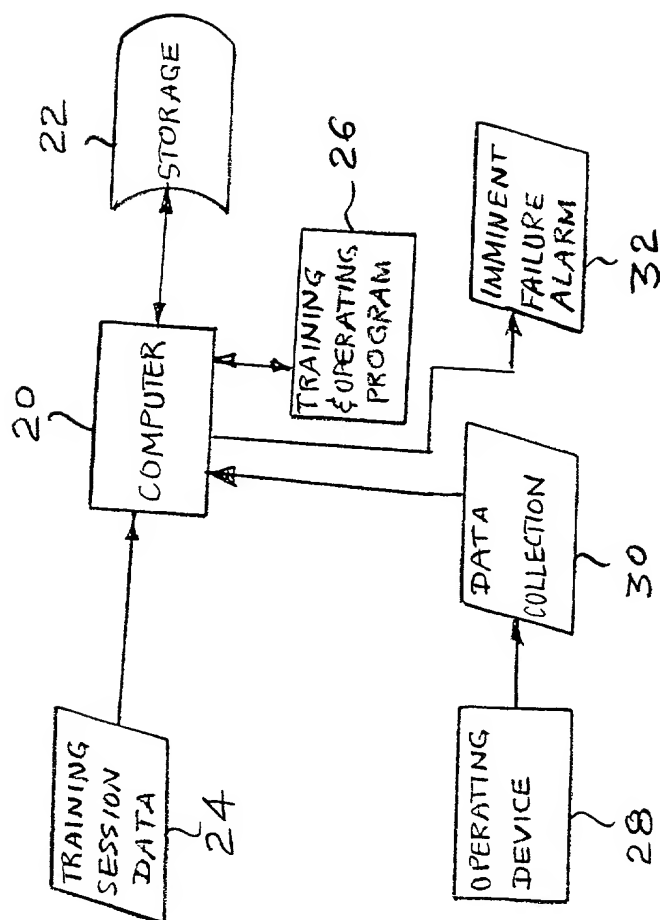Optimize number of variables M and number of clusters Z via cross validation

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Collect Data histories of devices until failure. This will in general be a matrix with N rows (uses) and M columns (variables)

2

Apply clustering algorithm to partition data set into Z clusters Fix centers and widths of Gaussian radial basis functions

4

Compute data matrix C and solve for linear weights $a$ using Ridge regression Use CV to optimize ●

6

Use linear weights $a$ and cluster centers and widths to compute wear increment for devices in operation

8

Cause warning signal if sum of wear increments (= virtual age) crosses user specified threshold

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FIG. 1

OOP9072 US01

FIG.2